

REMARKS

Claims 1 and 2 have been examined.

Rejection of Claims 1 and 2 Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Applicants' admitted prior art (APA) in view of Ryang et al. (U.S. Patent No. 6,159,600). For the following reasons, Applicants traverse these rejections.

Applicants submit that the Examiner has not provided a suggestion or motivation, either implicitly or explicitly in the prior art, for reasonably combining Applicants' admitted prior art and Ryang in order to arrive at Applicants' invention.

When applying 35 U.S.C. § 103, the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. *See Hodosh Block Drug Co., Inc.*, 786 F.2d 1136 (Fed. Cir. 1986); see also MPEP 2141.01. In addition, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. *See id.* Further, Applicants submit that "A patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of the invention under 35 U.S.C. § 103." *In re Sponnoble*, 405 F.2d, 578, 585 (CCPA 1969). However, the discovery of the cause of a problem does not always result in a patentable invention. *See In re Wiseman*, 596 F.2d 1019, 1022 (CCPA 1979). A different situation exists where the solution is obvious from prior art which contains the same solution for a similar problem. *See id.* To establish a prima facie case

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/892,862

of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to the one of ordinary skill in the art, to modify the references or to combine reference teachings. In addition, there must be a reasonable expectation of success. See MPEP 2142 and 2143. Further, the prior art reference, or references when combined, must teach or suggest all of Applicants' claim recitations. See MPEP 2141.03. However, even if the combination of the references teaches every element of the claimed invention, a rejection based on a prima facie case of obviousness is improper without a motivation to combine. See *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). That is, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In particular, the test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those with ordinary skill in the art. See *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000).

Applicants submit that a person of ordinary skill in the art would not have been motivated to combine Applicants' admitted prior art with Ryang in order to arrive at Applicants' claimed combination. In particular, Applicants submit that all electrically insulating materials are not resistant to permeation by sulfur. Therefore, the Examiner must provide some motivation or suggestion to combine and modify the cited references in order to arrive at Applicants' claimed combination.

The Examiner asserts that Ryang makes up for the deficiencies of Applicants' admitted prior art. In particular, the Examiner asserts that Ryang teaches providing a protective layer composed of an electrically-insulating material resistant to permeation by sulfur compounds.

However, Applicants submit that the Examiner is mischaracterizing the reference. That is, Applicants submit that Ryang does not teach or suggest a protective layer composed of an electrically-insulating material resistant to permeation by sulfur compounds. For example, Ryang does not contemplate the problem of sulfur compounds permeating the electrically-insulating layer of conducting wires, the bobbin, and the outer molding and the formation of sulfur compounds on the surface of the conducting wires, which thereby reduces the adhesive strength of the electrically-insulating layer to the conducting wire and results in wire breakage and short circuiting between the conducting wires.

Instead, Ryang teaches that in the high field intensity environment of an electrical motor, an insulating resin coating is subject to breakdown from oxide erosion resulting from surface corona and embedded corona (see col. 1, lines 32-36). Specifically, Ryang teaches that high field intensity leads to the generation of oxygen plasma that oxidizes and breaks down an insulating resin (see col. 1, lines 36-38). In addition, Ryang teaches solving this problem by providing an insulating resin with a coating that comprises an oxygen plasma resistant polymer (see col. 3, lines 1-39). Further, Ryang teaches providing an insulating resin with corona resistance (see col. 1, lines 38-42).

In comparison, Applicants identify and solve a different problem by providing a different solution. Applicants teach that when a conventional stepping motor 1 is mounted to an

automobile continuously variable transmission, it is entirely immersed in oil, which contains sulfur and organosulfur compounds (See page 4, lines 13-26). An example of a problem with immersing the stepping motor 1 in the oil is that the sulfur and the organosulfur compounds in the oil permeate the bobbins 53, the outer moldings 54, and the electrically-insulating layer 52, thereby reaching the copper wire 51 (See id.). As a result, chemical reactions occur at the surface of the copper wire 51, giving rise to a state of decreased adhesive strength of the electrically-insulating layer 52 to the copper wire 51 (See id.). Another problem is that when the temperature of the oil becomes greater than vaporization temperatures of volatile components in the oil due to heat generated by the coils 7, the electrically-insulating layer 52 of the conducting wires 50 is more likely to be permeated by sulfur and there is a greater likelihood of short circuiting occurring between the conducting wires 50 (See page 5, lines 9-14).

Applicants teach solving these problems by providing "preventing means comprising forming said electrically-insulating layer of a material resistant to permeation by sulfur compounds," as recited in independent claim 1. By curing the thermosetting resin, the spaces between the molecules of the thermosetting resin become narrower. As a result, materials which are capable of permeating the resin are limited to materials having molecular sizes which are smaller than the spaces between the molecules of the thermosetting resin. Moreover, only specific thermosetting resins, for example, modified polyimide resin, thermosetting epoxy resin, phenol resin, etc., are resistant to permeation by sulfur.

Thus, Applicants submit that, when confronted with this problem, a person of ordinary skill in the art at the time of the invention would not have looked to Ryang, which discloses

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/892,862

solving a problem of breakdown from oxide erosion resulting from surface corona and an embedded corona. Therefore, Applicants submit that there would not have been a suggestion or motivation to combine the cited references in order to arrive at Applicants' independent claim 1, and therefore, the rejection of this claim should be withdrawn.

The Examiner asserts that the motivation to combine Applicants' admitted prior art and Ryang would have been for the purpose of avoiding degradation of materials under a high filed intensity environment. However, Applicants submit that this is the problem addressed by Ryang, not Applicants' invention, and therefore, a person of ordinary skill in the art reasonably would not have been motivated to combine Applicants' admitted prior art and Ryang in order to arrive at Applicants' claimed combination. Moreover, Applicants submit that, in order to make the jump from the combination of Applicants' admitted prior art and Ryang to Applicants' claimed combination, impermissible hindsight must be employed.

With respect to dependent claim 2, Applicants submit that claim 2 is patentable over Applicants' admitted prior art and Ryang at least by virtue of its dependency from independent claim 1, and therefore, the rejection of claim 2 also should be withdrawn.

In addition, assuming *arguendo* that a person of ordinary skill in the art would have been motivated to combine the admitted prior art and Ryang, Applicants submit that this combination still would not arrive at the claimed combination. For example, Applicants' claim 2 recites, *inter alia*, "said bobbin and said outer molding are composed of a thermosetting resin." Ryang does not contemplate forming a bobbin out of sulfur resistant material. Moreover, Ryang does not contemplate forming an outer molding out of sulfur resistant material. Thus, Applicants submit

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/892,862

that neither Applicants' admitted prior art nor Ryang, either alone or in combination, teaches or suggests all of the recitations of Applicants' independent claim 2, and therefore, the rejection of this claim should be withdrawn.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860


John J. Dresch
Registration No. 46,672

Date: August 30, 2002